

SWIM Users Forum

Presented by:
FAA SWIM Program Office
July 29, 2021

System Wide Information Management
AJM-316

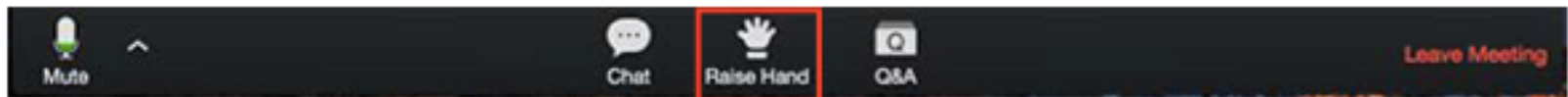


Welcome!

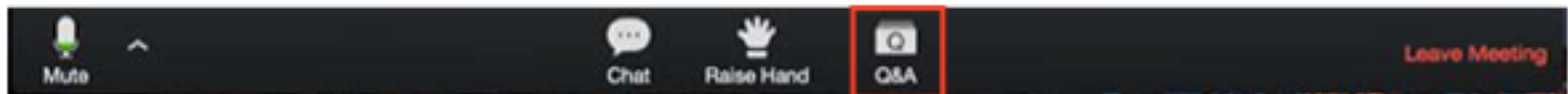
Optional ways to engage during the webinar

As a webinar attendee you should see a toolbar at the bottom of your screen with the icons pictured below. Here's how and when to use each option.

Raise Hand: Click the "**Raise Hand**" icon in your menu bar (see image below) to ask a question **verbally**. The moderator will be alerted and will unmute you so you may ask your question.



Q&A: Click the "**Q&A**" icon in your menu bar (see image below) to submit a question via **text**. The moderator will be alerted and will read your question aloud on your behalf or respond to you via text.



Agenda

- SWIFT Portal Use Cases
- Lost Message Retrieval Capability
- STDDS and SFDPS Update
- SWIFT 14 Recap / SWIFT 15 Preview

SWIFT Portal Use Cases

Presented by:

Michael Pozsgay

SCDS/SWIFT Portal Lead

Alex Murray

Systems Engineering Support

Anne Silverstein

Systems Engineering Support

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SWIFT Portal is Live!

What's New?

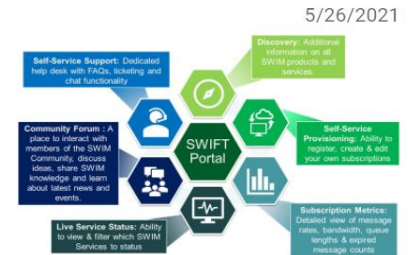
- **Community Forum**
 - Interact with the aviation community, share thoughts, make suggestions for new capabilities, etc.
 - Keep up with the latest updates and SWIM news
- **Discovery**
 - Direct access to the NSRR for accessing schemas, JMSDDs, other technical documentation for SWIM services
- **Portal Familiarization Videos**

Community

News

Welcome to the SWIFT Portal!

The SWIFT Portal was built on your feedback and suggestions to gain additional functionality, customization, and visibility into System Wide Information Management (SWIM) data. The Portal gets its name from the SWIM Industry-FAA Team (SWIFT), an information sharing initiative between the FAA and aviation stakeholders.



All previous SCDS users should have received an series of email notifications from scds@faa.gov with additional information on the SWIFT Portal. We hope that the Portal is easy to use and navigate, if you need help or want to learn more about the SWIFT Portal functionality check out the FAQs on the Support Page.

[READ MORE](#)

< >

Recent Discussions

How to start a great discussion

5/27/2021, 8:52:38 AM | [Community Forum Overview](#)

SWIFT Community – Rules and Guidelines

5/26/2021, 10:44:47 PM | [SWIFT Community – Rules and Guidelines](#)

Pretty Print XML in TFMS Flow

7/12/2021, 4:00:50 PM | [TFMS](#)

Categories

Welcome to the Community!

[Community Forum Overview](#)

[SWIFT Community – Rules and Guidelines](#)

[SWIFT Portal News &](#)

Frequently Asked Questions

- I'm new to SWIM, do you have any sample clients for getting started?
 - SWIM Jumpstart Kit is available for download here: [JSK Download](#)
- What about reference examples or actually using SWIM data?
 - Yes, we have created a SWIM Github Site
 - [FAA SWIM Github](#)
 - JMS Client
 - AMQP Client
 - SWIM Utilities for consuming and using SWIM data

☰ README.md

FAA SWIM JMS Client

Provides a very basic JMS Client that simplifies connecting and consuming from FAA SWIM.

Installing

1. Clone this repository
2. Run mvn clean install
3. Add dependency to applicable project pom

```
<dependency>
  <groupId>us.dot.faa.swim.jms</groupId>
  <artifactId>jms-client</artifactId>
  <version>1.0</version>
</dependency>
```

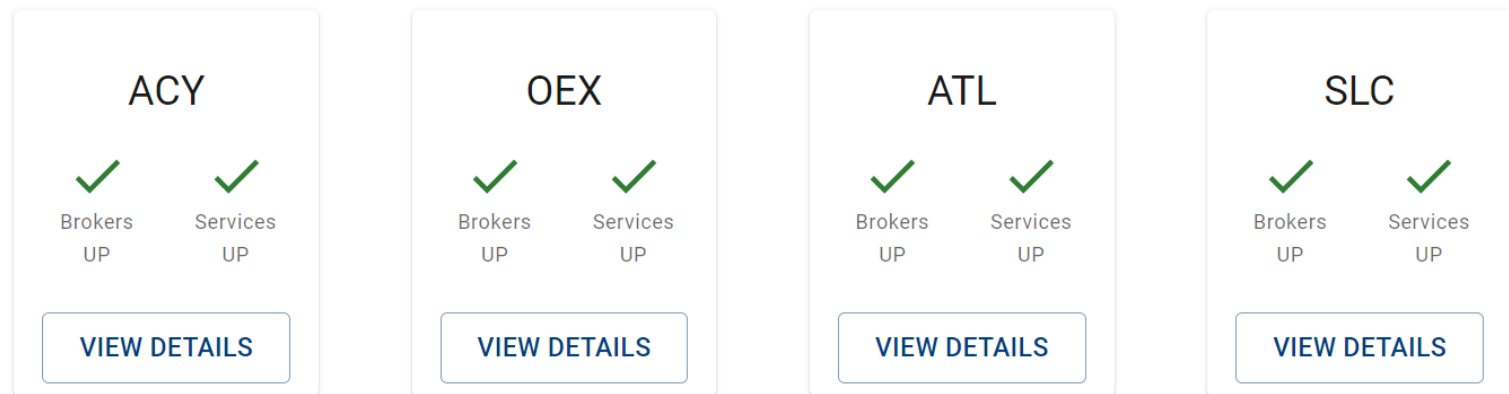
Usage

Import SWIM JMS Client

```
import us.dot.faa.swim.jms.JmsClient;
import us.dot.faa.swim.jms.JmsClientConfig;
```

NESG Users and SWIFT Portal

- **As an NESG user can I still access/utilize the SWIFT Portal? YES!**
 - **NESG Users will still need to create an account to access Portal**
 - Utilization of the Community Forum, Guides, Support, and more
- **Status Overview Page:**
 - View status of NESG gateways
 - ACY, OEX, ATL, SLC
 - Health of each SWIM service at respective gateway under “View Details”
 - Users can validate data against any reported outages, downgrades, incidents over the last 90 days



SWIFT Portal Helpful Links

- **SCDS is now the SWIFT Portal!**
 - <https://portal.swim.faa.gov/>
- **Instructions and User Guide**
 - [Documentation Here](#)
- **Where do I sign the Access Agreements?**
 - [FAA Agreement Portal](#)
 - Create account using same address registered on Portal
- **Portal Help and Support Page**
 - [FAQs, Help, Guides, Support Teams](#)

SWIFT Portal Announcements

- **Data Compression**

- **When and How?**

- **August TBD** all newly created subscriptions will default to compression
 - Will be done during a maintenance event; all Portal users will be notified in advance

- **Existing/Active Subscriptions?**

- SWIM Support will work with existing/active users to migrate to compression
 - Webinar TBD (August timeframe) to walk through updating clients for compression
 - Once enabled, will not impact current session; will need to restart once enabled

- **Where can I find more information and help?**

- SCDS User Guide
 - SWIM Support Team
 - August Webinar, details to follow
 - Updated SWIM Jumpstart Kit will be published

SCDS/SWIFT Portal Reminder

Reminder: SCDS is not intended for Operational Use.

- SCDS is meant for Public External SWIM Users.
- FAA Partners that use SWIM in their operations should still consume data from their Legacy NESG connection.

Contact information

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Alex Murray – Systems Engineering Support

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SWIM Lost Message Retrieval Capability

Presented by:

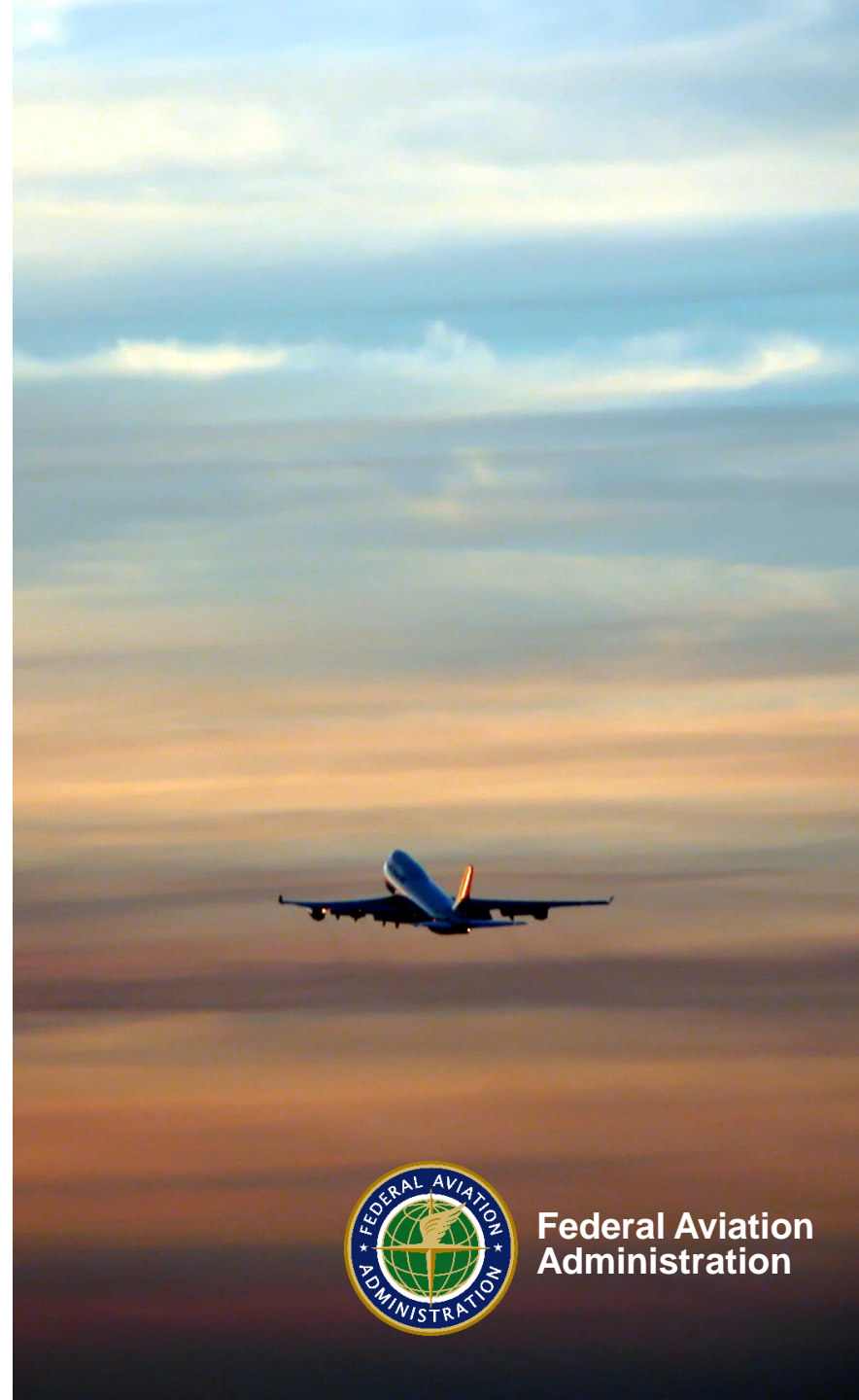
Todd Emo

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Overview

Problem

SWIM consumers have no current means of retrieving messages that were lost due to connection interruptions or other consumer related issues.

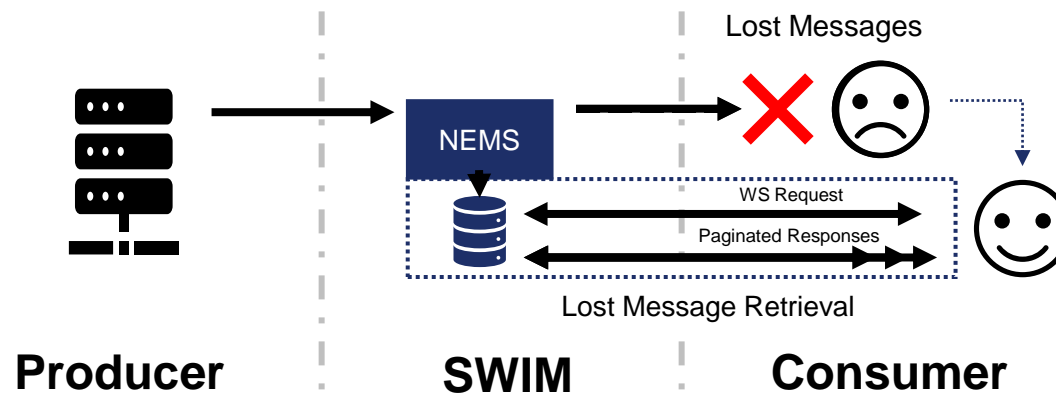
Solution

Provide a function that allows consumer to request messages that were not able to be consumed.

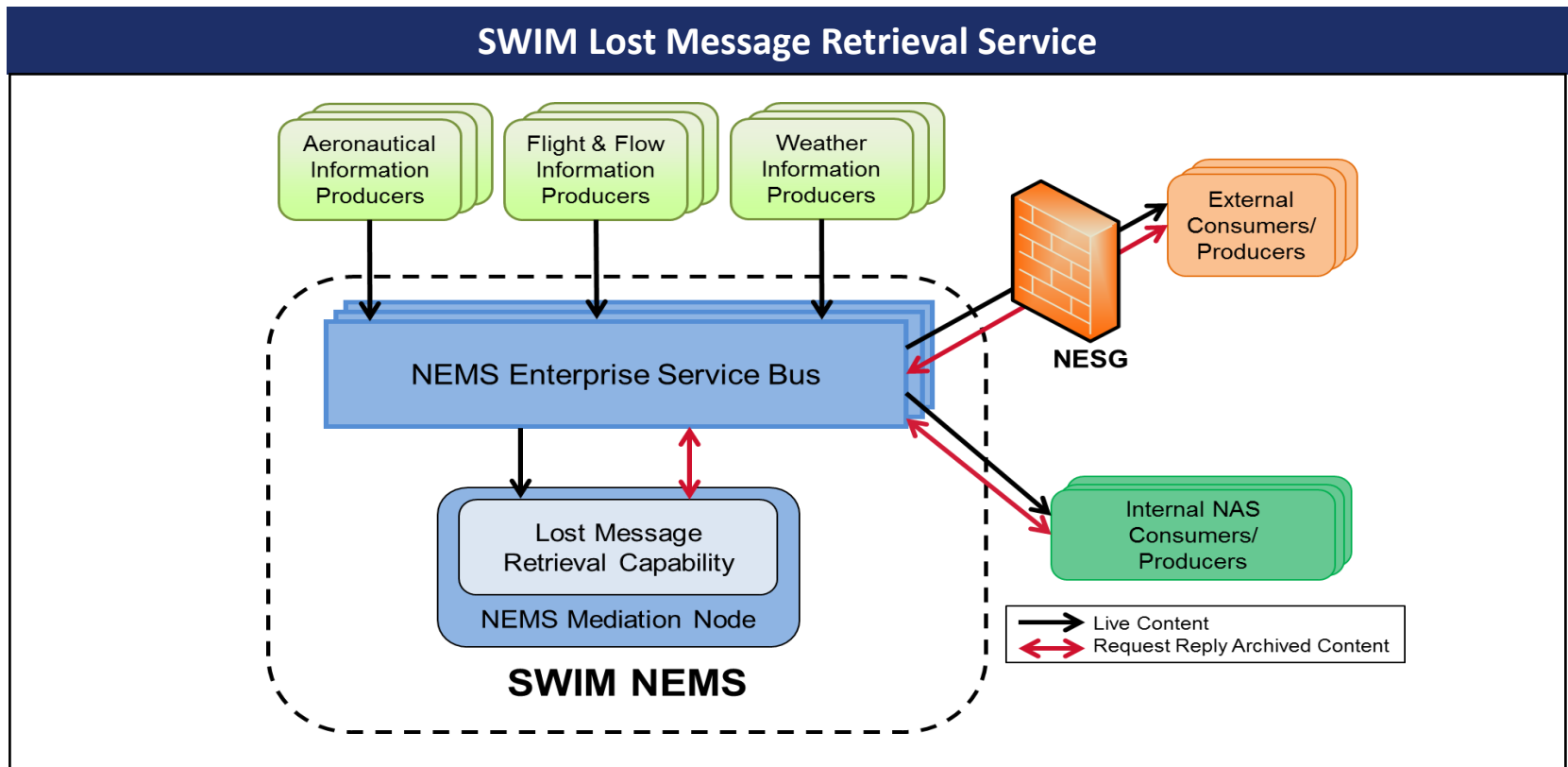
Approach

Create a capability to store producer data and allow retrieval of the data by authorized consumers through a RESTful Web Service.

ConOps

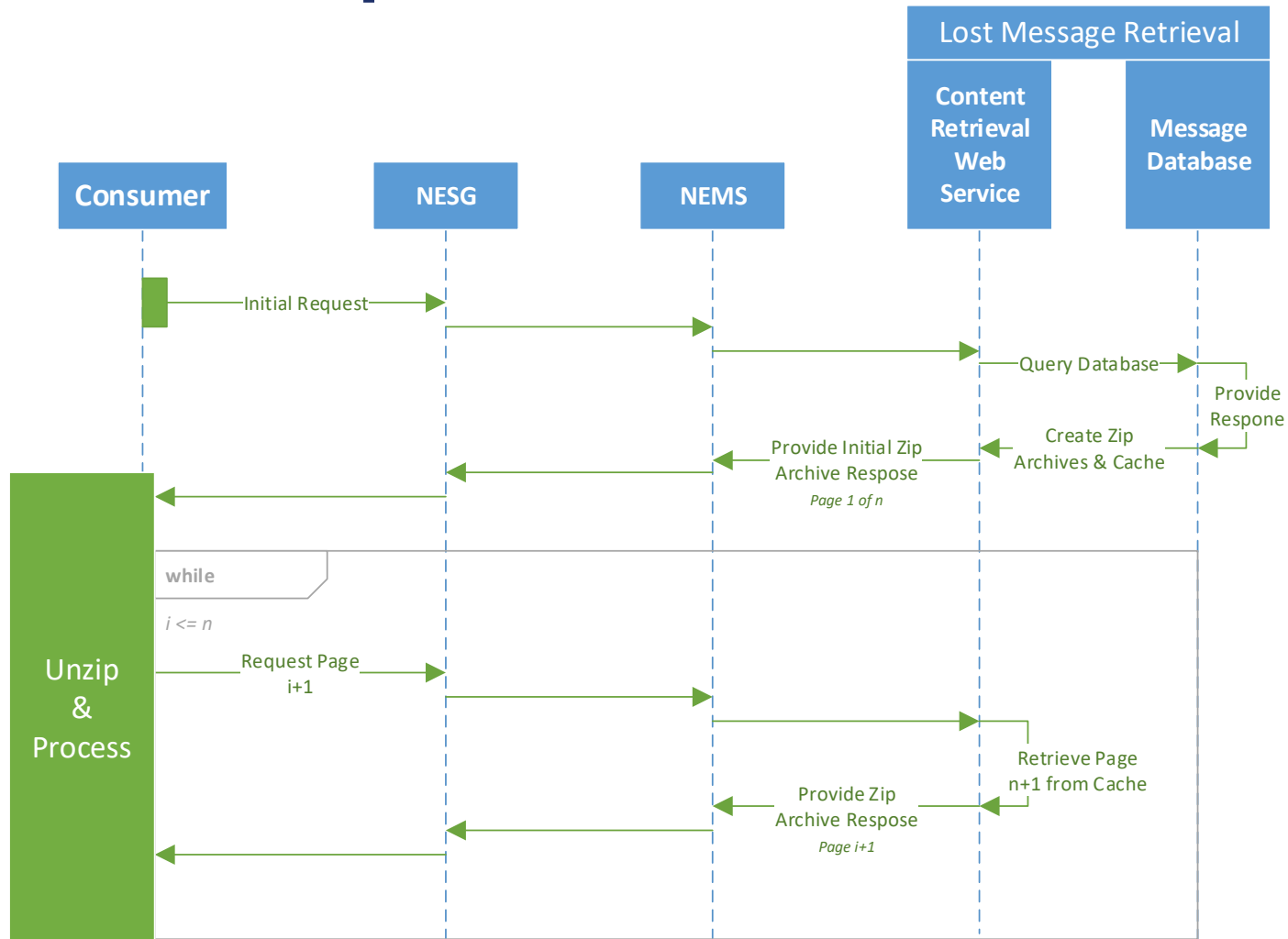


Service Architecture



The Lost Message Retrieval Capability enables the FAA to effectively provide SWIM publish/subscribe (JMS) content from NEMS producers to consumers who were not able to receive the content when it was originally published to NEMS.

Service Sequence



Service Details

Timeframe	15-day moving window
Availability	Within a few minutes of publishing
Metadata	JMS Properties; indexed for retrieval at subscription level resolution
Interface	RESTful Web Service retrieval through message metadata
Delivery	Compressed zip archive containing requested messages as content files
Large Responses	Pagination to retrieve content in smaller chunks via links
Jumpstart Kit	Sample end user clients provided that automates downloading
Security	Fine grained access control policies control specific access to content
Limits	Number of request per user and concurrent responses



Not Reconstitution



Not a Playback

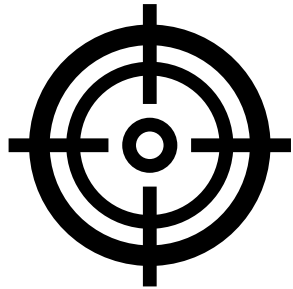


Not an Archive



A capability to retrieve messages sent over SWIM that where not consumed

Schedule and Availability



Initial Release

- Late Fall TBD
- Available via NAS and NESG
- Published as Service in NSRR

Future Release

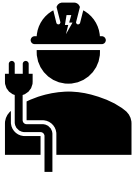
- Not currently planned
- Web Application Interface
- Potential hosting in cloud; ESCS



First data sets available on LMR

- AIM FNS JMS
- DCNS DLD
- FDPS ERFDP-JMS
- ITWS
- ITWS_Alert
- STDDS ASDE-X
- STDDS SURFACE MOVEMENT EVENT
- STDDS TOWER DEPARTURE EVENT
- STDDS INFRASTRUCTURE SYSTEM MONITOR & CONTROL
- STDDS-TAIS
- STDDS Runway Visual Range (RVR) Observations
- TFMS Status
- TFMS TFDM Outbound
- R13 Flight Data
- TFMdata E9 Flight Data FIXM
- TFMdata E9 Flow Information AIXM/FIXM
- R13 Flow Information
- TBFM MIS

Operational Use Cases



Consumer Maintenance



VPN or Network Issue

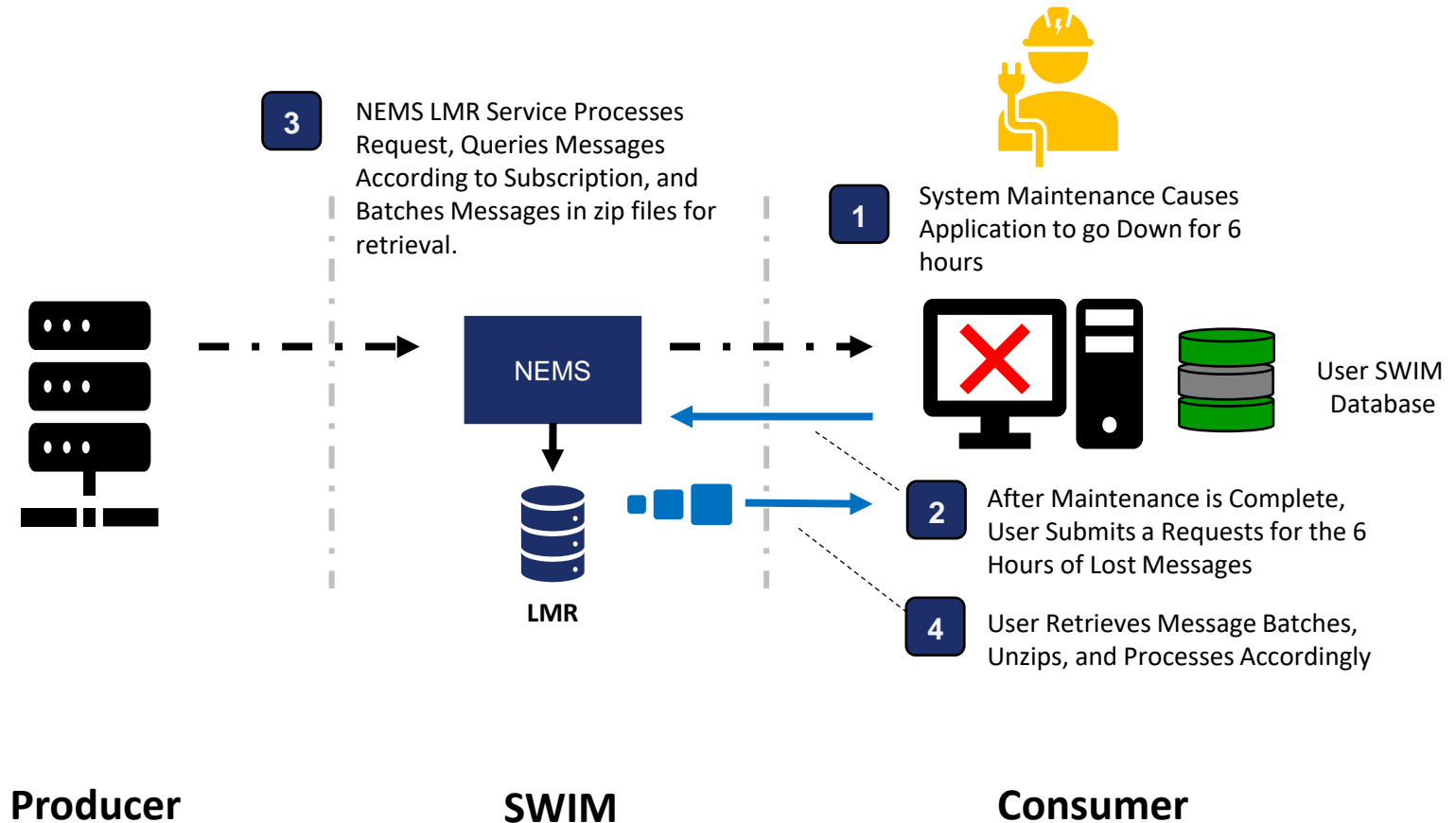


Planned or Unplanned Events

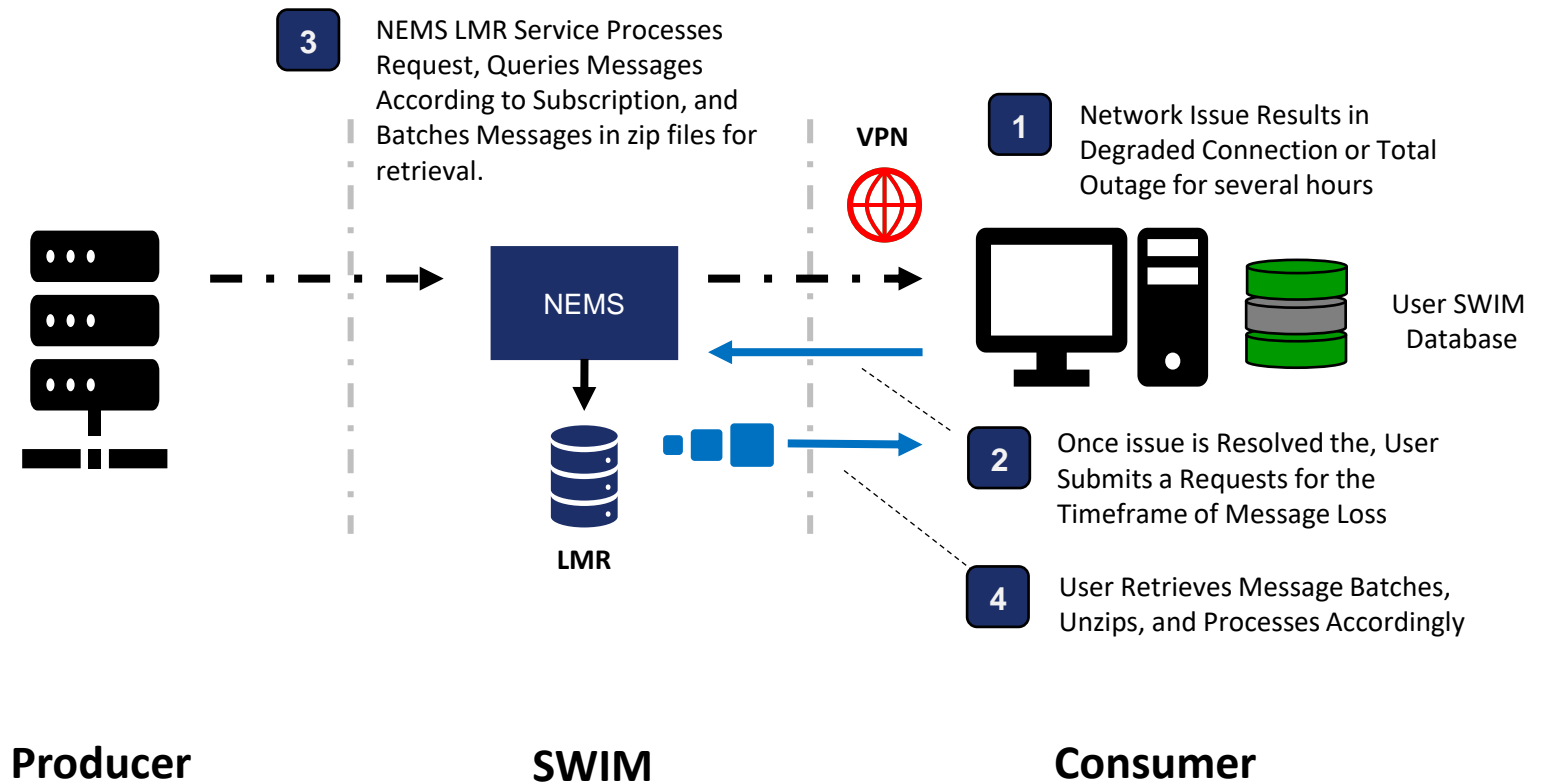


Enhanced Troubleshooting

Use Case: Consumer Maintenance



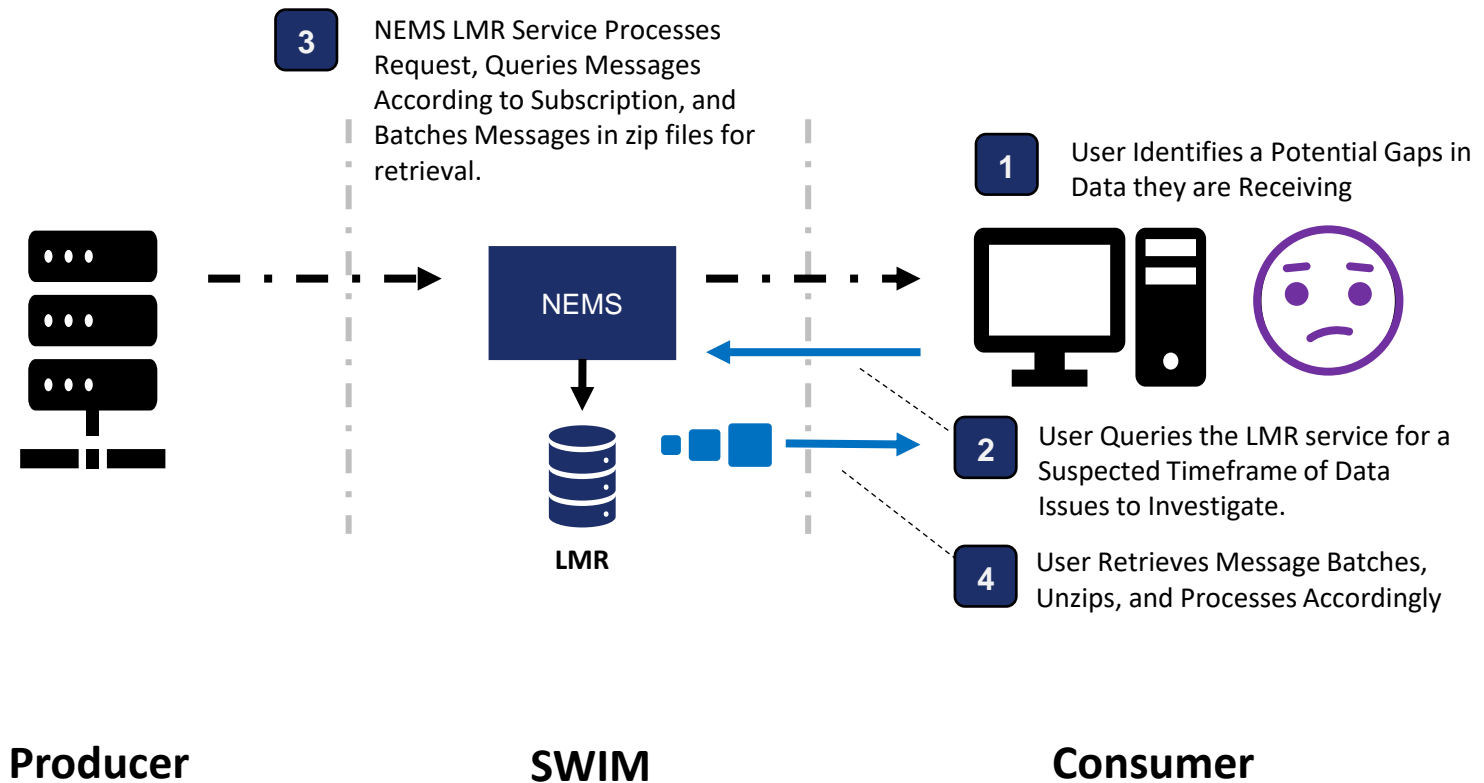
Use Case: VPN or Network Issue



1 Fire Erupts out at Facility Causing a Total Site Failure



Use Case: Enhanced Troubleshooting



Questions



STDDS R6P2 Update

Presented by:

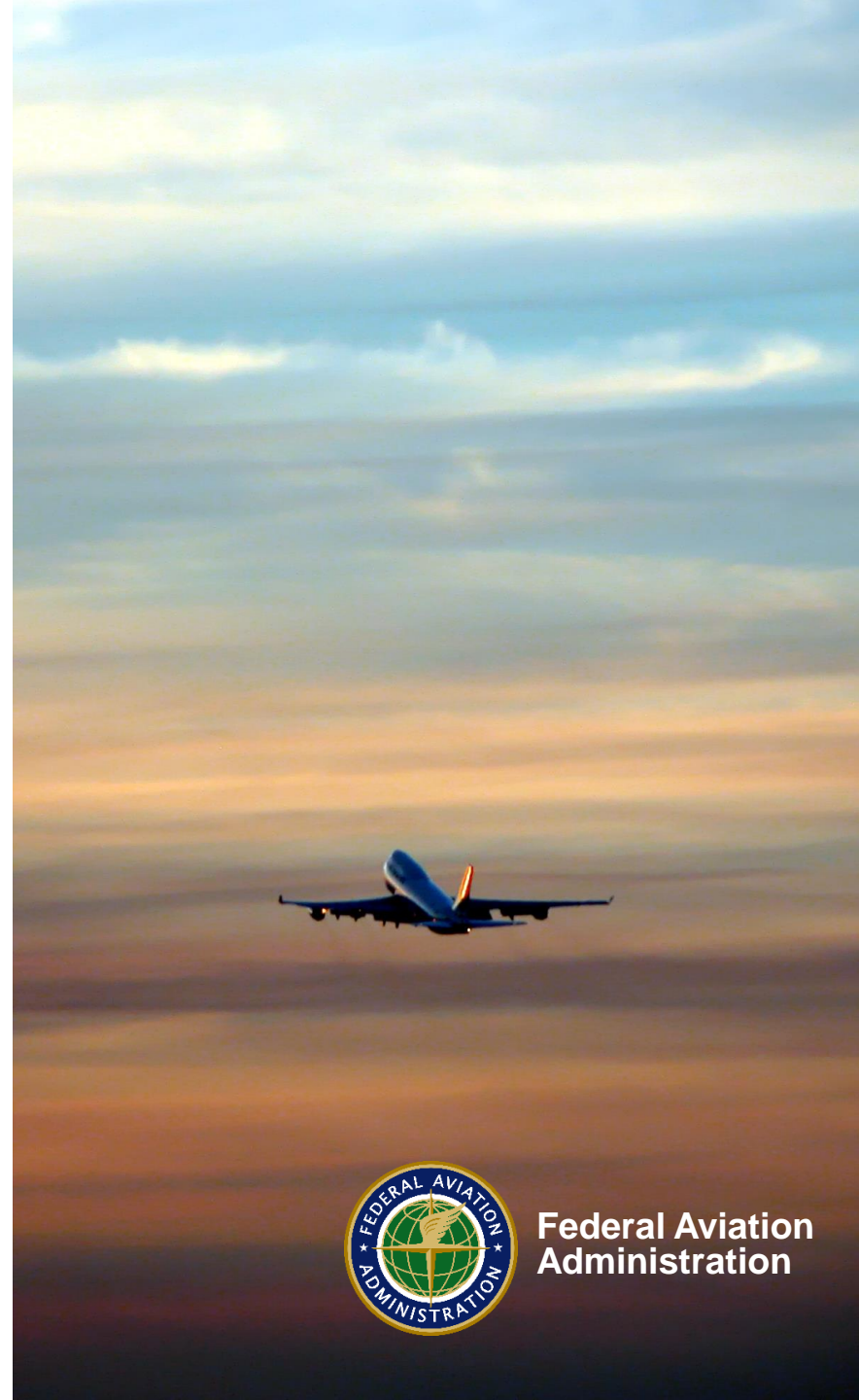
Julia Korey

Systems Engineering Support

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STDDS R6, Now R6P2 (Release 6 Phase 2)

- **Timeline:**
 - Key Sites:
 - Y90 September/October 2021
 - D10 November 2021
 - Deployment:
 - Starts January 2022
- **Due to COVID-19, an expanded R6 (R6P2) will add functionality to R6 and be deployed later as a single release**
 - All previously planned R6 functionality is retained
 - Additional functionality is being added
 - Schema to remain backward compatible
 - Namespace frozen at R4
 - All new schema fields are optional
 - Most enhancements are administrative or designed to improve performance and are transparent to end users
- **Draft documentation (WSRD, JMSDDs, Schema, Release Notes) and sample data available on NSRR**

STDDS Updates

- **R6P2 Functionality**

- Select enhancements, new R6P2 additions in **blue**:

All Services	<ul style="list-style-type: none">• LADD filtering (Limiting Aircraft Data Displayed https://ladd.faa.gov/)• Improve STDDS downtime detection/record keeping• Security enhancements
TAIS	<ul style="list-style-type: none">• Data to remain in R4/R5 format. No client-side changes required• Add optional rawFlightRules field to TerminalAutomationFlightPlan message• Publication of all associated TAIS data regardless of altitude• Publish STARS AIG210 in TAIS Service• Reduce message loss on STARS switchover
TDES	<ul style="list-style-type: none">• Enhance TDES with 8 new TDLS messages• Publish additional TDLS data—beacon code, ERAM ECID, aircraft type—in TDES messages• Parse and publish entire dataHeader in DATISMessage
SMES	<ul style="list-style-type: none">• Enhance SMES with 2 additional airport movement events—Runway in, Runway out• Add *_COVAR and DF type fields to the MLAT and ADSB CAT10 messages to improve track precision measure• Enhance CAT10 messages with SFDPS flight plan data• Add ASDE-X data published in Maintenance Mode to STDDS feed
ISMC	<ul style="list-style-type: none">• Publish link status and site heartbeat in MMIXM format in addition to XML native

SFDPS Update

Presented by:

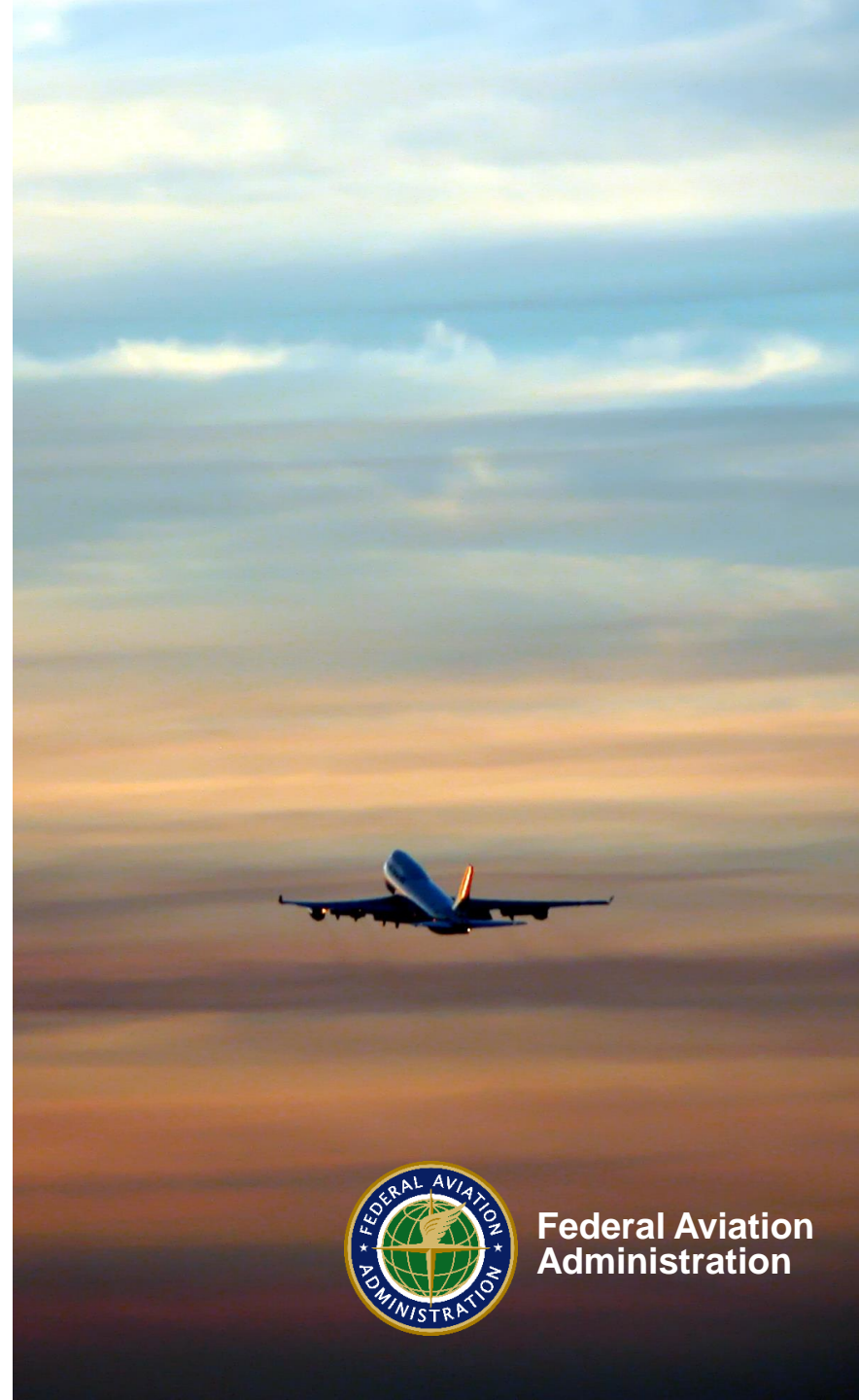
Ross Skiles

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SFDPS Update

- **New Release: SSM-SFDPS-010 (OARS Table Changes)**
- **Timeline:**
 - Key Site:
 - October 2021
 - National Delivery:
 - December 2021
- **Key Features:**
 - Bug Fixes
 - New Flight and Airspace data fields
 - Minimal impact to consumer software
- **Description documentation along with relevant sample data will be posted to the NSRR prior to deployment**

More detailed release information will be provided at the next SWIM Users Forum

SWIM Industry- FAA Team (SWIFT) Update

Presented by:

Ray Mitchell

Systems Engineer LST Contract Support

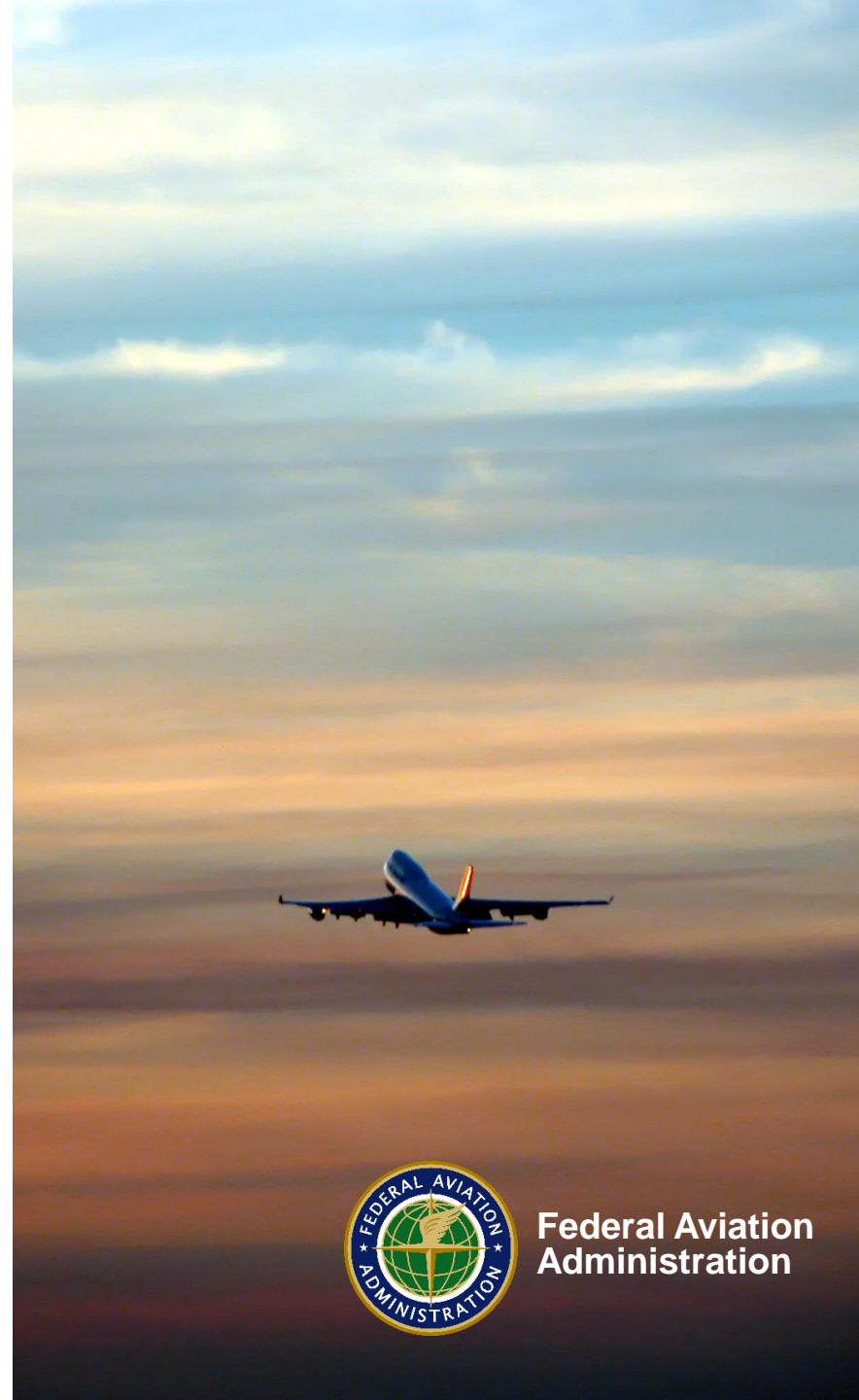
Xavier Pratt

Systems Engineer LST Contract Support

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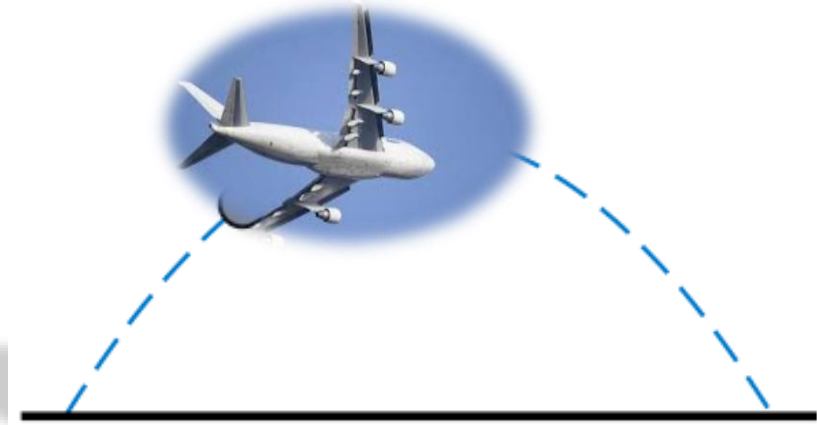


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SWIM Industry FAA Team (SWIFT) Update

- **SWIFT 14** (Largest) saw virtual crowds of up to **400 plus registered attendees** for the 3.5-hour event.
 - Topics covered sparked interest of the forum members such as:
 - Trajectory Based Operations (TBO)
 - Notice to Airmen (NOTAMS) and its new Application Programming Interface
 - Surprise Demonstrations by TFDM Lab Connection
- **SWIFT 15** - **August 19th, 2021**, official email correspondence released – check your in boxes for Draft Agenda and other event details!



Operational Issue #1: TBFM

Operational Problem

Environment: ATC programs are initiated by the FAA, managed within an airline AND by FAA, and often influenced or affected by DOT Rules and policy

Problem: We lack access to real-time information on TBFM program settings and parameters that drive a variety of different TBFM operations. Without these data, carriers are reactive.

Under
Assess
Identify
Resolve

Ops Issue 2: Flight Planning over IP

Goal

Align FAA Flight under the new
Understand
Data Share
Better flow
decision
improve

Goal

Imp the
reflect the
Status - C

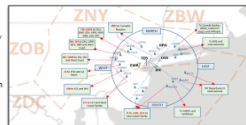
Ops Issue 3: Early Planning for Disruptions

Goal

Identify drivers and key indicators that would inform disruptions to airspace user operations earlier
Vignette #1: Weather impacts to Flight Routes in Northeast Region
Vignette #2: NBAA – Circumventing New York Metro Area Flow Restrictions
Vignette #3: Impacts of Airport Configuration Change at LGA

Status

Typically meet semi-monthly to flesh out Ops challenges when encountering Northeast disruptions
Engage FAA reps to understand current SWIM services that can address "information gaps"
E.g., NCR, En Route Airspace Data Publication (SPDPS)
Seek to leverage open-source tools to visualize solutions for the community
E.g., User H3 Hexagonal Hierarchical Spatial Index "Honeycomb"



TBFM Delays Sub Team Sprint 2

Goal remains the same – determine the departure delay given to a flight by TBFM

- Delay should be the difference between aircraft ready time and the scheduled departure time
- CTM / ETD fields initially set as ready time, but can be updated for many reasons, not transparent to the end SWIM user

Current Activities & Status

- Efforts continue with Bi-weekly Meetings to achieve longer term solution
- TBFM team has captured 5 issues/enhancement areas on MIS. Currently assessing these issues internally, are seeking to develop a plan that will both improve the MIS and meet the constraints of the program



6/25/20
Kickoff Meeting

08/11/20
TBFM Producer SME Working Session (Bi-Weekly Cadence official start)

Development & Analytics Focus Group

Operational Issues Focus Group

[SWIFT 15 Registration Link](#)

SWIFT Focus Groups Updates

Operational (Ops) Issues Focus Group

New York Case Study Status & Next Steps

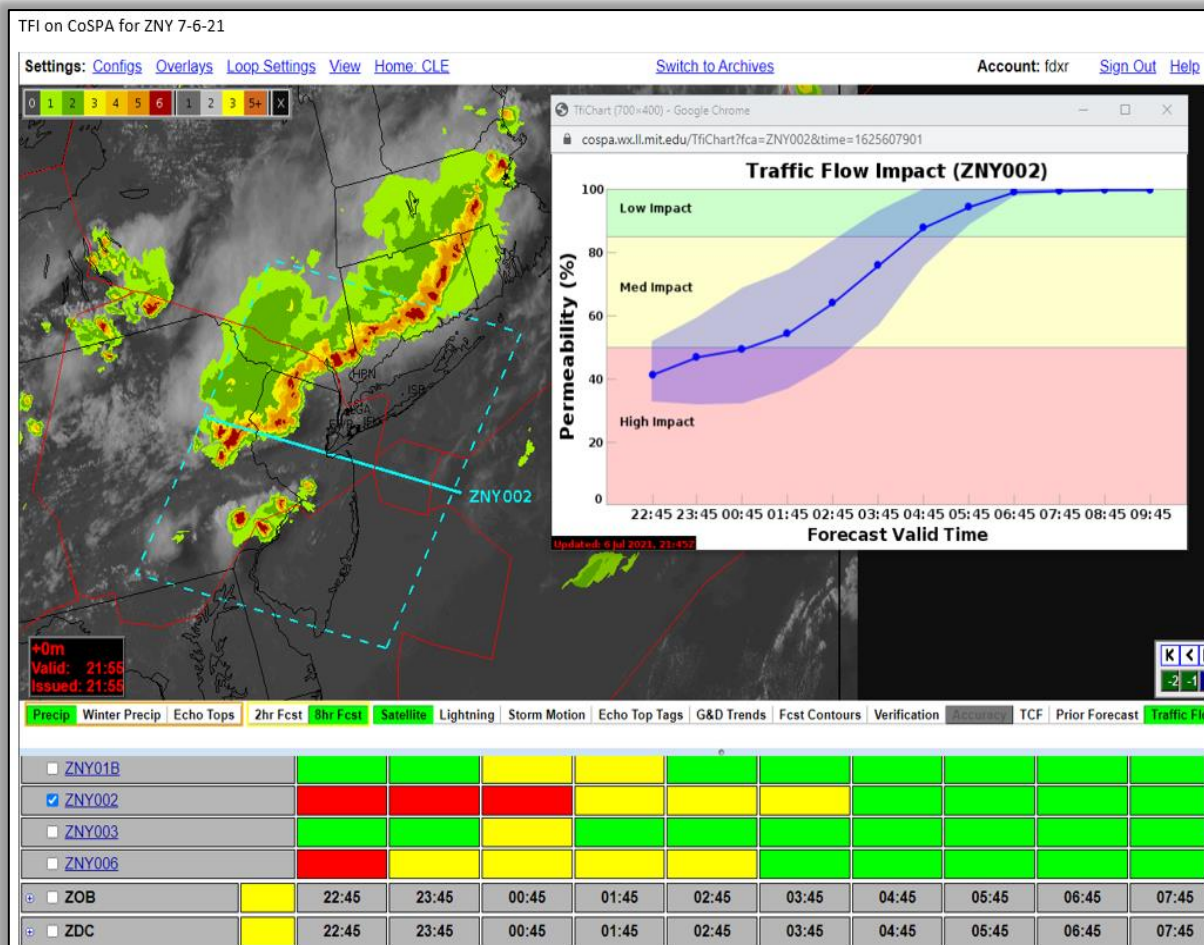
- **Current Activities:**

- RAPT and TFI Exploration
 - Select additional candidate dates to serve as baseline for the case study model
 - Strategic Planning versus Tactical Execution of Dates
 - Incorporating supplemental external data
 - Airport Schedule/Configuration
 - Traffic Count against Sector Map Values / Sector Capacity and TFI
 - Playbook for Fixes/Routes
- SWIM Connection (SCDS) Subscribing to SFDPS Flight/Airspace and TFMDData: Flow
 - Receiving identified relevant SWIM message/data elements for candidate dates
 - Correlate key SWIM data to IROP disruptions
 - Access to NCR (optional)
 - 4D constraints based on given flight trajectory
 - Positioning of convective activities against flight trajectories

- **Next Steps – Targeting SWIFT 15 Timeframe:**

- Honeycomb Application Support Developing Notional GUI (mock-up) for Case Study

Leveraging CIWS, CoSPA & TFI Tool...



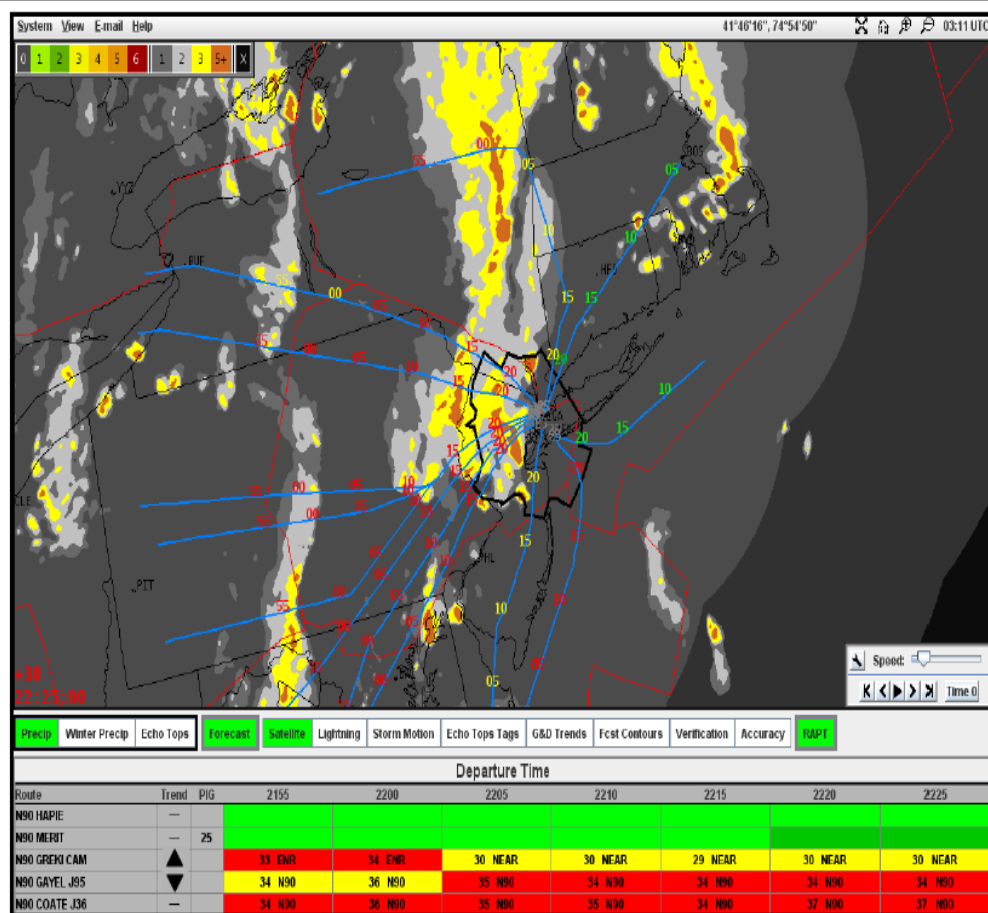
Views integrates the following:

- Able to view Echo Tops, Lightning, Growth/Decay Trends and Storm Motion
- Can view 2-hour (CIWS) or 8-hour (CoSPA) forecasts...helpful for Flight Planning purposes.
- TFI, all participants have a common picture of the statistical distribution of capacity reduction 0–12 hours in advance so that discussions can focus on risk assessment, FCA rate setting, and determining the start and end times of TMIs

Most of this data is disseminated via the SWIM feed to Tech Center, then is distributed to TSDs.

Note: CoSPA & CWIS are MITLL prototype capabilities

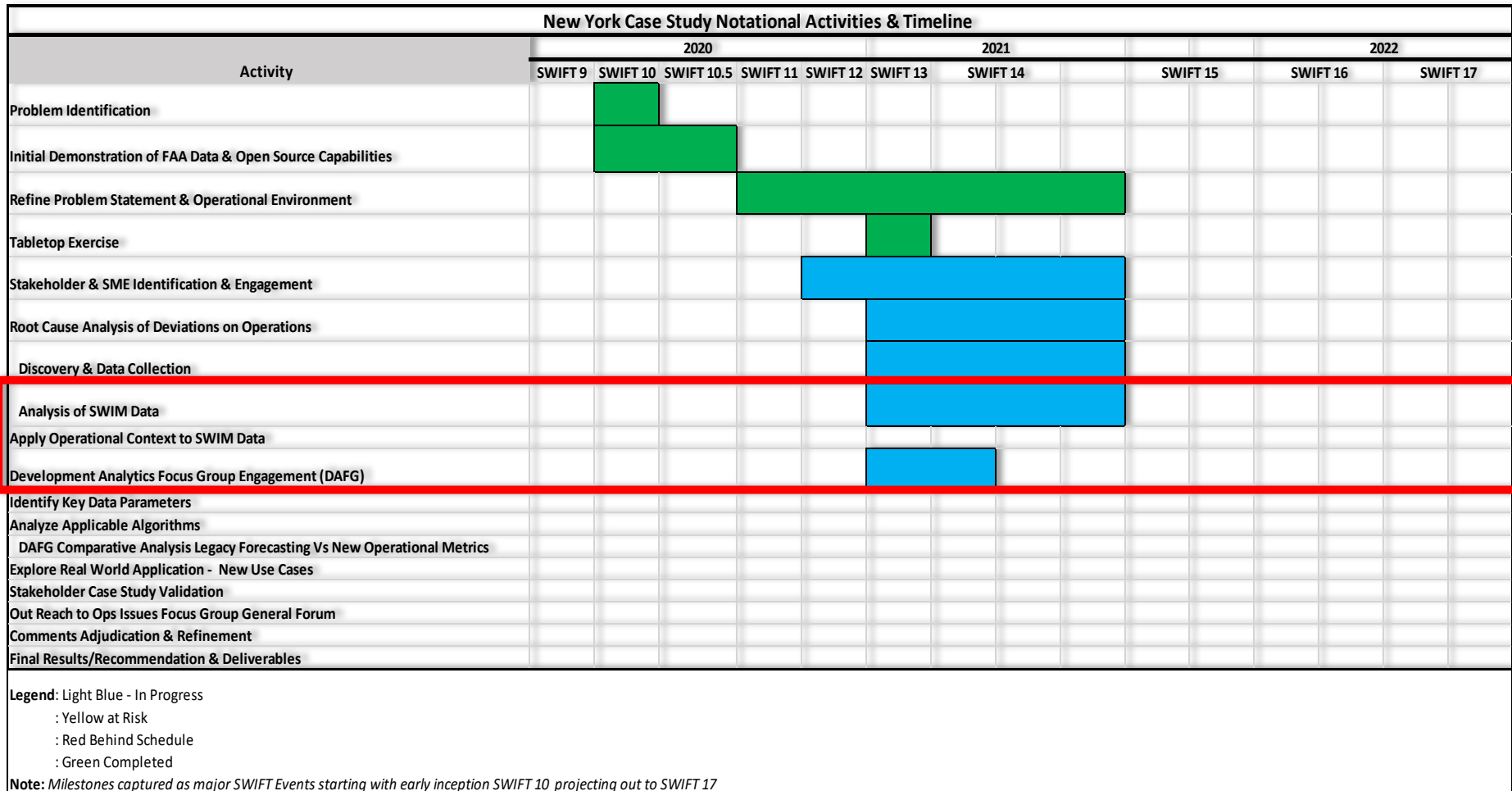
Leveraging RAPT...



- RAPT predicts availability of departure routes for up to 30 minutes into the future
- Provides support for proactive decision making, e.g.,:
 - Reopening of routes closed by convection
 - Reroute planning
- Lincoln prototype at:
 - NY facilities (2003-2013)
 - Chicago since (2010-2013)
- RAPT now deployed on TFMS at NY, Chicago, PCT, & PHL facilities

RAPT provides route status information on weather-impacted departure routes to support better ATC & airline decision-making

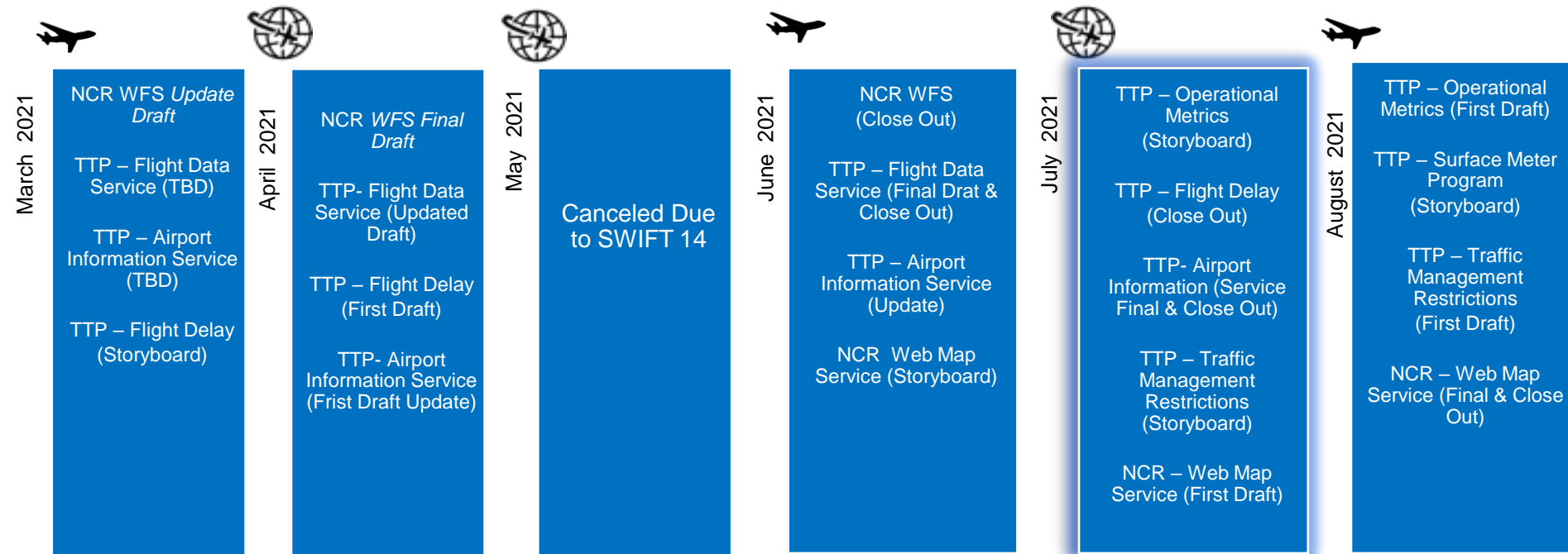
Notional Timeline



Red Outline – Depicts Current Activity

Operational (OPS) Context Document Focus Group

Ops Context Document Focus Group Updates & Schedule



- Important Notices

- SWIFT 15 – August 19th, 2021 @ 12:30-4pm EDT

- Schedule Subject to Change

- Document Repository:

- <https://connect.lstechllc.com/index.cfm/main/opconfocusgroup>

Development & Analytics Focus Group (DAFG)

DAFG – Status & Next Steps

Current Status:

- DAFG has decided to slow the cadence from monthly to more of a quarterly session
- DAFG team is actively supporting the TBFM Sprint 2 resolution activities continuing to meet Bi-Weekly with TBFM producer program team to fully flush out proposed solutions
 - FAA and Airlines have provided comments to the updated Java Message Description Document (JMSDD) and will be closing out the comment adjudication process in the next few weeks

Next Steps:

- Key members of the DAFG have been asked to support the Ops Issues Focus Group – New York Area Case Study and as progress continues with the study the DAFG may spark off more ad hoc sessions or even another small working group



Want to join us? Contact Us:

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- Ray Mitchell – ray.Mitchell@lstechllc.com

Contact information

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Ray Mitchell & Xavier Pratt | SWIFT Team

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 [SWIFT FAA website](#) / [LST SWIFT](#)

Upcoming SWIM Events

- **SWIFT 15**
 - August 19, 2021 from 12:30-4pm ET

We hope to see you there!

Thank You



Questions? Email swim@faa.gov